

REMARKS

Status of the Claims

Claims 1-7 and 11-30 are pending and rejected.

Claims 1, 12, 13, 15, 17, 24, 26 and 28 have been amended.

With reference to the paragraph numbers of the published application (US20050003398A1) used hereinafter, support for the amendment of claim 1 can be found at least in paragraphs 66, 126 and 133.

Claims 12, 17 and 26 have been amended to clarify the attachment points of the moieties and to correct an obvious artifact caused by the software used by Applicant. Support for the amendment can be found at least in Figure 2.

Claims 13, 15 and 24 have been amended to distinguish the index used to specify the number of $-\text{CH}_2-$ moieties from the indices used in the claims from which they depend.

Support for the amendment of claim 28 can be found at least in paragraph 66.

Claims 31-35 are new. Support for the new claims can be found at least in Figures 2 and 17 and paragraphs 53-56, 60-66 and 90.

Entry of the amendment is respectfully requested.

Priority

The Examiner alleges that claim 1 of the previous response drawn to an MFS comprising the formula $-\text{CH}_2-(\text{OCH}_2\text{CH}_2)_m$ wherein when $m=0$, n is not 18 and claim 28 setting forth the genus Q-MFS-A-A-AG are not disclosed in the applications to which the present application claims priority.

Regarding “the formula $-\text{CH}_2-(\text{OCH}_2\text{CH}_2)_m$ wherein when $m=0$, n is not 18”, amendment of the claims, done without concession to the propriety of the Examiner’s statement, has rendered this issue moot.

Regarding the genus Q-MFS-A-A-AG, Applicants disagree that the claimed genus is not disclosed in US Application 09/847,113, filed May 1, 2001, of which this application is a continuation. In view of Applicant’s argument below against the new matter rejection with respect to the compound “Q-MFS-A-A-AG”, and in view of the fact that as a continuation of a parent application, the present application contains no new matter with respect to the parent, the Examiner is respectfully requested to recognize that the effective filing date of the present application for the purposes of prior art is at least as early as May 1, 2001.

Claim Rejections under 35 USC 112, first paragraph

The Examiner has rejected claims 1-7 and 11-30 under 35 USC 112, ¶ 1, as allegedly failing to comply with the written description requirement by containing new matter. Applicants disagree.

The Examiner contends that the limitation “wherein when $m=0$, n is not 18” in claim 1 does not have basis in the disclosure. Again, without admission to the propriety of the rejection, the rejection of claim 1 on this basis is obviated by amendment.

The Examiner contends that claims 11, 12 and 17-30 set forth new genera, stating that “[f]or instance, each of the offending claims are drawn to *any* attachment moiety “A,” while the cited passages each are drawn to sulfur (S) only. Furthermore new claim 28 introduces Q as a polyethylene glycol that may read on polymers with as many as 5000 repeating units, rather than the smaller oligoethylene glycols of paragraph 0066.”

Applicant disagrees that the attachment of the various moieties to attachment moieties other than sulfur is not disclosed. The claims as filed show that Applicant was in possession of multiple types of asymmetric monolayer forming species in which various different moieties can be attached to attachment linker moieties in a generic sense. Furthermore, paragraphs 61-66 disclose that the AMFS can comprise an insulator moiety, and paragraphs 130-132 state that

the covalent attachment of the conductive oligomers and insulators may be accomplished in a variety of ways. . . . Generally, some type of linker is used, as depicted below as “A” in Structure 10, where “X” is the conductive oligomer, “I” is an insulator and the hatched surface is the electrode[.]

In this embodiment, A is a linker or atom. The choice of “A” will depend in part on the characteristics of the electrode. Thus, for example, A may be a sulfur moiety when a gold electrode is used. Alternatively, when metal oxide electrodes are used, A may be a silicon (silane) moiety attached to the oxygen of the oxide (see for example Chen et al., *Langmuir* 10:3332-3337 (1994); Lenhard et al., *J. Electroanal. Chem.* 78:195-201 (1977), both of which are expressly incorporated by reference). When carbon based electrodes are used, A may be an amino moiety (preferably a primary amine; see for example Deinhammer et al., *Langmuir* 10:1306-1313 (1994)). Thus, preferred A moieties include, but are not limited to, silane moieties, sulfur moieties (including alkyl sulfur moieties), and amino moieties. . . .

Although depicted herein as a single moiety, the insulators and conductive oligomers may be attached to the electrode with more than one "A" moiety; the "A" moieties may be the same or different."

Thus, the specification discloses that an insulator of any embodiment, such as that disclosed in paragraph 66, can be attached to an electrode through a generic attachment linker that is not necessarily sulfur. Similarly, paragraph 70 discloses that the EFS of any embodiment "may be directly attached to an attachment linker as defined below", i.e., to an attachment linker in a generic sense.

Applicant also disagrees with the Examiner's suggestion that the formula Q-MFS-A-A-AG is not supported in its full scope by the specification. Paragraph 133 states that "Additionally, although not always depicted herein, the conductive oligomers and insulators may also comprise a "Q" terminal group." Paragraph 126 (as previously amended with emphasis added) states that "in a preferred embodiment, a terminal group is added, sometimes depicted herein as "Q". . . . Preferred terminal groups include -NH₂, -OH, -COOH, and alkyl groups such as -CH₃, and (poly)alkyloxides such as **(poly)ethylene glycol**, with -OCH₂CH₂OH, -(OCH₂CH₂)₂OH, -(OCH₂CH₂)₃OH, and -(OCH₂CH₂)₄OH being preferred." Accordingly, the specification discloses that an insulator can end in a terminal group "Q" that can be (poly)ethylene glycol in the generic sense, with the polyethylene glycol disclosed in paragraph 66 being just one possible embodiment.

The claims are thus fully supported by the specification. Withdrawal of the rejection is respectfully requested.

Claim Rejections under 35 USC 112, 2nd paragraph

The Examiner has rejected claims 1-7 and 11-30 as allegedly being indefinite. Specifically, the Examiner alleges that 1, 12, 13, 15 and 24 are indefinite with respect to the index "n" recited therein; that claims 17 and 26 are indefinite with respect to the attachment point and the appearance of divalent hydrogen and/or monovalent oxygen; and that claim 28 is indefinite with respect to the range of the index "n". Applicant submits that amendment of the claims has overcome the rejections. Withdrawal of the rejections is therefore respectfully requested.

Claim rejections under 35 USC 102

The Examiner has rejected claims 1-7 and 11-30 under 35 USC 102(b) as being anticipated by Tao, US/2002/0121314A1.

Tao, however, is US Patent Application 09/847,113, to which the present application claims priority as a continuation application under 35 USC 120. The present

specification discloses the claims under 35 USC 112, and since it is identical to the specification of Tao, Tao also supports the claims as amended. Accordingly, the present claims are entitled to the filing date of Tao, which is not available as prior art under 35 USC 102(b). Withdrawal of the rejection is therefore respectfully requested.

Claim rejections under 35 USC 103

The Examiner has rejected claims 1-7 and 11-30 under 35 USC 103(a) as allegedly obvious over Offord, *Langmuir*, 1994, 10: 761-766 in view of Marks, US 6,203,758 B1. Applicants disagree.

To establish a prima facie case of obviousness, the Examiner is required to analyze the *Graham* factors; that is, the Examiner must (a) determine the scope and content of the prior art, (b) ascertain the differences between the claimed invention and the prior art, and (c) resolve the level of ordinary skill in the art. MPEP 2141(II) (citing *KSR Int'l Co., v. Teleflex Inc.*, 550 U.S. 398, 399 (2007)). Once the Examiner has performed this factual inquiry, the Examiner is required to provide "some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." MPEP 2142 (citing *KSR* at 418).

Offord does not teach or suggest the claimed invention. Independent claims 1, 28 and 32 each recite a method comprising contacting a metallic surface with an asymmetric monolayer forming species in which the MFS comprises an alkyl group attached to at least one -OCH₂CH₂- moiety. Offord, disclosing compounds such as those in Figure 1 in which sulfur is substituted with *n*-octadecyl, *n*-butyl or *tert*-butyl groups, does not teach or suggest the claimed method. Offord in view of Marks provides no suggestion or motivation to modify the disclosed compounds such that the claimed invention is obvious.

Regarding independent claim 31, which reads on using a compound comprising a moiety -(CH₂)_n(OCH₂CH₂)_mOH in which *m* is an integer from 0 to 10 and *n* is an integer from 1 to 15, the Examiner cites Offord for the teaching of an octadecyl derivative which the Examiner claims would have similar properties to the "undecyl compounds" set forth in the rejected claims. In support of this finding, the Examiner cites MPEP 2144.09, which states that "compounds which are . . . homologs (compounds differing regularly by the successive addition of the same chemical group, e.g., by -CH₂- groups) are generally of sufficiently close structural similarity that there is a presumed expectation that such compounds possess similar properties. *In re Wilder*, 563 F.2d 457, 195 USPQ 426 (CCPA 1977)." It should be noted, however, that in *Wilder*, the court found "very close structural similarity of the claimed compound and the reference compounds" where

“[t]he claimed compound differs from the homologue disclosed in Biswell [the cited reference] by the presence of *one* additional CH₂, i.e., it is a next adjacent homologue.” *Id.* at 458, fn. 7; and 460 (emphasis in the original). Thus, the presumption of similar properties might hold if, according to case law, a claimed compound and a compound disclosed in a cited reference are *adjacent* homologs. In the present case, the “octadecyl” derivative of Offord does not represent an adjacent homolog of the genus of compounds recited in claim 31. The presumption that the claimed and cited compounds would have similar properties therefore is not applicable.

It is further noted that under *The Procter & Gamble Co. v. Teva Pharmaceuticals USA, Inc.*, No. 2008-1404, -1405, -1406 at 8 (Fed. Cir. 2009) (emphasis added), the court stated that

A known compound may suggest its homolog, analog, or isomer because such compounds often have similar properties and therefore chemists of ordinary skill would ordinarily contemplate making them to try to obtain compounds with improved properties. . . . [However,] it remains necessary to identify some reason that would have led a chemist to modify a known compound in a particular manner to establish *prima facie* obviousness of a new claimed compound.

Thus, the Examiner is still required to show a motivation or suggestion for modifying a known compound.

The Examiner has not shown that the genus of compounds recited in the claims shares similar properties with the cited compounds, and further has not provided any “articulated reasoning” why there would be any motivation to modify the references. A *prima facie* case of obviousness has therefore not been established against the present claims. Withdrawal of the rejection is therefore respectfully requested.

Conclusion

Applicant believes that the claims are in condition for allowance. The Examiner is invited to call the undersigned at the number below to expedite prosecution.

Although Applicant does not believe that any additional fees are due, the Commissioner is authorized to charge any fees required or to credit any overpayment to Deposit Account No. 50-0310 (Docket No. 067456-5036-US01).

Respectfully submitted,

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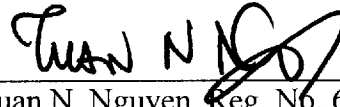
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